

REMARKS

The applicant respectfully requests reconsideration in view of the amendment and the following remarks. Support for newly added claim 26 can be in the original 1, 2, 3, 4 and 6 and on page 11, section 39 of the specification. Support for newly added claim 27 can be found in the original claim 4. Support for newly added claim 28 can be found in the original claim 5 respectively. Support for newly added claim 29 can be found in the original claim 6. Support for newly added claim 30 can be found in the original claims 5 and 7. Support for newly added claim 31 can be found in the specification at page 1 section 2. No new matter has been added.

Claims 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as obvious over Turner US 6,331,233 B1 (Turner). Claims 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as obvious over Segal 6,238,494 B1 (Segal). The applicant respectfully traverses these rejections.

As previously stated, Turner is discussed in the applicant's specification in paragraph no. 8 at page 3 which states,

U.S. Pat. No. 6,331,233 in Turner asserts uniform texture throughout the plate thickness from the outer edge to the center of the plate. **However, the strain history of the material at the center is different from that at the edge.**

...

Even after annealing, rolling and re-annealing, the difference in strain would be expected to affect the texture. (emphasis added)

The applicant's independent claim requires,

"a texture that is uniform both through said thickness and from said center to said edge, and further wherein said refractory metal plate has

- i) **a constant mix of grains with orientation {100} and {111} crystallographic orientations,** and

- ii) a distribution of {100} and {111} crystallographic orientations that varies by less than 30 percent across the surface of any plane of said refractory metal plate, said planes being selected from planes that are orthogonal to the thickness of said refractory metal plate, and planes that are diagonal to the thickness of said refractory metal plate, and
- iii) a distribution of {100} and {111} crystallographic orientations that varies by less than 30 percent across any thickness of said refractory metal plate. (emphasis added)

The applicant does not believe that Turner nor Segal teach these features of claim 26. In fact, there is no disclosure in Segal of {100} and {111} crystallographic orientations. Furthermore, there is no teaching in both of the references of (i) let alone the combination of (i), (ii) and (iii) as is required by the applicant's claimed invention. For the above reasons, these rejections should be withdrawn.

In addition, the Examiner correctly stated Segal teaches at col. 5, lines 52-55 the sputtering targets comprise 99.95% tantalum. The applicant claim that the refractory metal plate comprises the metal being selected from the group consisting of tantalum and niobium, said metal being of at least 99.99% purity. The applicant believes that Segal does not suggest this purity. Segal does not suggest a purity greater than 99.95%. It is very hard to achieve a purity greater than 99.95%, let alone 99.99%. A purity of 99.99% is significantly greater than 99.95% and in fact, claims 30 and 32 require a purity of 99.999% which is even greater than 99.95%.

It is known that a change in purity of 99.95% to 99.99% is not easy to achieve. This is a substantial improvement in purity. There was no teaching or suggestion in Segal and Turner how to obtain very high purity metals such as tantalum with low grain size. Those skilled in the art know that lower purity metals can achieve a finer or lower grain size more easily due to the

impurities being present. Since there is no indication in Turner or Segal as to how an average grain size of about 40 microns or less can be achieved for a metal such as tantalum having a purity of at least 99.99%, the claimed subject matter is not obvious.

Furthermore, purity is a feature that can be considered to render claims patentable.

Section 1.02[9] of Chisum which discusses the term purity and states,

In the Wood Paper Patent Case (1874) the Supreme Court expressed doubt whether "a slight difference in the degree of purity [of two products] justifies denominating the products different manufactures ..."n382 And indeed there is a long line of cases that hold that mere purification of known materials does not result in a patentable product.n383 For example, in *In re Merz* (1938) ,n384 the applicant invented a new process for purifying ultramarine of floatable dirt. The Court of Customs and Patent Appeals affirmed a rejection of the applicant's product claim for pure artificial ultramarine as produced by the process: "[The applicant] is not entitled to a patent on the article which after being produced has a greater degree of purity than the product produced by former methods."

An exception to the purity rule was created by the celebrated "aspirin" case, *Kuehmsted v. Farbenfabriken of Elberfeld* (1910) .n385 One Hoffmann obtained the patent on aspirin (acetyl salicylic acid) in 1900.n386 The defendant in an infringement suit relied upon the prior work of one Kraut which was described in a publication. Kraut used a different method to produce what he called acetyl salicylic acid. The defendant argued that Hoffmann's aspirin "is nothing more than Kraut's acetyl salicylic acid 'purified.' " The court observed that there was some doubt whether Kraut's product was in fact chemically the same as Hoffmann's aspirin. But assuming that the two were the same, it nevertheless upheld the patent.

IN RE SUNE BERGSTROM AND JAN SJOVALL also discusses purity (see Appendix A).

Here the Court held,

It seems to us that the answer to that question is self-evident. [3] by definition: n10 [*1402] pure materials necessarily differ from less pure or impure materials and, if the latter are the only ones existing and available as a standard of reference, as seems to be the situation here,

perforce the "pure" [***22] materials are "new" with respect to them.
As this court stated in *In re Williams*, 36 CCPA 756, 171 F.2d 319, 80
USPQ 150 (1948):

In the specification the applicant discusses the importance of having highly pure metal such as tantalum with a unique combination of fine grain structure and uniform texture (see page 5, paragraph no. 15 and page 7, paragraph no. 26 of the specification).

In view of the above amendment, applicant believes the pending application is in condition for allowance.

A one month extension has been paid. Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 13194-00163-US from which the undersigned is authorized to draw.

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Respectfully submitted,

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